

CAPALO AI

# ENERGY MARKET TRADING WITH BESS and PV+BESS

## Strategies and practical considerations

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# WHAT WE'LL COVER

**01** The role of traders, aggregators, and algorithms in maximizing BESS value

**02** How trading strategies differ between day-ahead, intraday, and balancing markets for BESS and PV+BESS

**03** The impact of liquidity, price volatility and physical delivery on trading outcomes



# 01

# Capalo & The Three Roles

# Not every market participant can handle multi-market trading



## TRADER

- Wholesale market access and execution
- Schedules and balance responsibility
- Hands-on intraday trading experience



## AGGREGATOR

- Eligible assets and product qualification
- Metering, telemetry and delivery obligations
- Ability to coordinate different asset types



## OPTIMIZER

- Not necessarily a trader / aggregator
- Capable scheduling engine
- Decides how and when to allocate capacity and deliver energy

**Across supported markets, Capalo AI combines trading, aggregation, its own optimization platform and remote asset control.**

Market access and product eligibility depend on the country and asset.

# Capalo AI in Brief

Operational assets under multi-market trading in **7 countries**

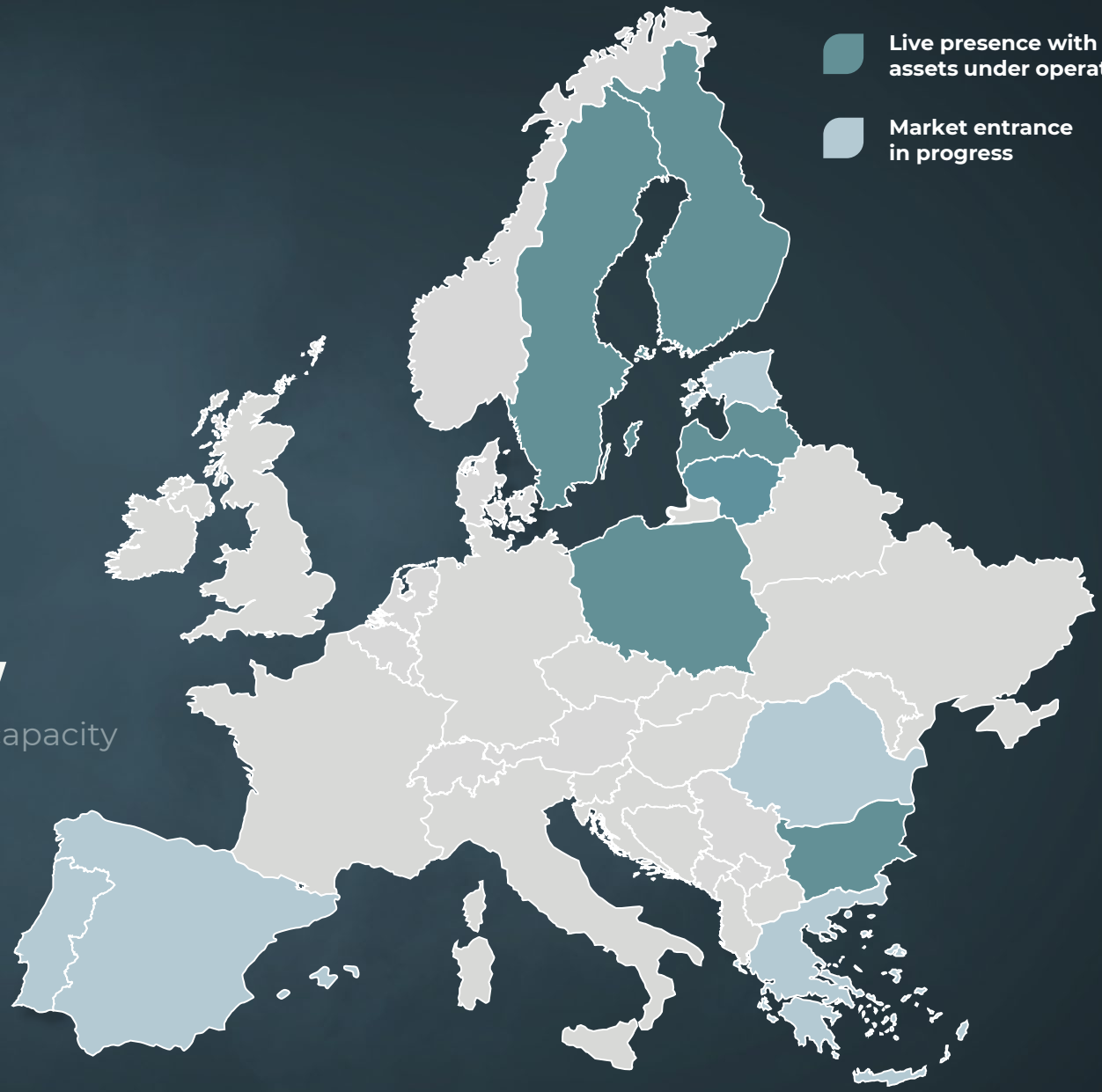
Market entry in progress

**800+ MW**
BESS under trading

**1.7+ GW**
Signed BESS capacity

**400+ MWp**
PV under trading

**7**
Live markets




Not yet operational in Hungary or Greece. Public company figures checked 2 Nov 2026.

# What makes the algorithm behind them good

01

## AI-forecasts depth and self-learning models

Day-ahead, intraday, capacity reservation, balancing energy, and imbalance price and activation, with scenarios around the forecast.

02

## Integration with the physical asset

Capalo’s asset control logic: closing the loop between commitment and physical reality.

03

## Real-time transparency

Technical, commercial and financial logic visible to the asset owner close to real time: what is happening, and how much they are making.



# 02

# Trading Strategy Logic

# Plan today, for tomorrow: Optimize. Adjust today. Repeat.

*Capacity must be correctly split between wholesale (DA + intraday) and balancing markets, then adjusted as new information arrives.*

01

## Price forecasts

Reliable forecasts across every segment: day-ahead, intraday, balancing capacity, balancing activation and imbalance, with scenarios for uncertainty.

02

## Technical constraints

State of charge, min/max limits and PV production forecast, plus ramp-up/ramp-down speeds and the grid connection for BESS and hybrid assets.

03

## Probability of activation

How sharply the local balancing market can move, and when activation is likely. This shapes bid pricing and energy left for other commitments.



# Two Strategic Approaches

## CONSERVATIVE / SIZE-AWARE BIDDING

A large asset can act as a price maker, or lose an entire bid because the volume is too big relative to the price offered.

There is no universal “correct” aggressiveness. The right posture depends on the asset and has to be discussed directly with the client.

## POOLING LOGIC / CAPALO'S PREFERENCE

Aggregate eligible assets, bid together for balancing capacity and energy where permitted, and coordinate one asset against another.

Pooling can improve delivery resilience when asset availability is diversified.

Revenue-splitting mechanism: each owner sees what share of pool revenue their asset earned, and why.

Portfolio-level optimization coordinates allocation across assets.



# 03

# Liquidity & Volatility

# The Core Revenue Driver

Spread, liquidity and volatility shape the opportunity. Executable volume and asset constraints determine what can be captured.

**01** **Market opportunity**
Prices, spreads and volatility

↓

**02** **Executable trade**
Order-book depth and market acceptance

↓

**03** **Feasible delivery**
Power, energy and existing commitments

## Net value

After losses, fees, degradation and delivery obligations

Conceptual trading logic. No Hungarian asset-revenue estimate.



# Different trading models, different commitments

| Approach | Main decision | What needs attention |
|---|---|---|
| Day-ahead arbitrage-led | When to charge and discharge | Spread after losses, cycles and connection limits |
| Reserve-led | How much capacity to commit | Activation uncertainty and enough energy to deliver |
| Coordinated multi-market | Where flexibility has the highest value | Opportunity cost and interaction between commitments |

**The appropriate model depends on the asset, accessible products and the owner's risk limits.**

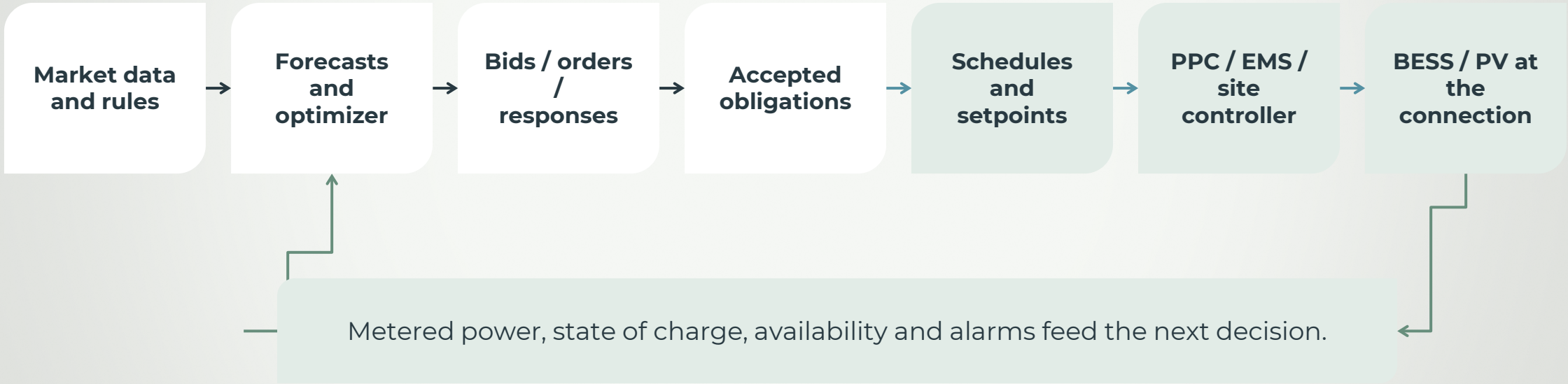
Trading approaches can combine. This is a decision framework, not a ranking or revenue forecast.



# Connecting market decisions with physical delivery

**MARKET INTERFACES**

**PHYSICAL DELIVERY**




**Accepted obligations constrain the next decision. Local asset protections remain hard limits.**

Conceptual operating loop. Interface and controller responsibilities depend on the site.

# When the plan meets operating reality

## THE TRADER'S DIFFICULTIES

Late or partial market execution

Unexpected activation or a changed PV forecast

Stale telemetry and delayed commands

## THE ASSET OWNER'S CONSTRAINTS

State of charge, temperature and availability

Warranty limits, degradation and site priorities

Import/export limits at the grid connection

**Control logic needs clear priorities, acknowledgements and safe fallbacks.**

The loop closes when commanded behaviour and measured delivery agree, or trigger a controlled response.



# MULTI-MARKET VALUE DEPENDS ON THE WHOLE LOOP

### Markets need one coordinated plan

Every commitment changes the capacity, energy and flexibility left for the others.

### The asset defines what can be delivered

Grid limits, state of charge, availability and owner constraints must inform every bid and setpoint.

### Control and feedback make the plan real

Reliable execution, measured delivery and transparent settlement connect model decisions to owner value.

# *Thank you*



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**www.capaloai.com**